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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,926	01/28/2002	Masanori Mizoguchi	Q68222	1457
7590	11/09/2004		EXAMINER	
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC 2100 Pennsylvania Avenue N.W. Washington, DC 20037-3213			KIM, CHONG R	
			ART UNIT	PAPER NUMBER
			2623	

DATE MAILED: 11/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

10/055,926

### Applicant(s)

MIZOGUCHI, MASANORI

### Examiner

Charles Kim

### Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8, 10-12, 15, 17 and 20 is/are rejected.
- 7) ☒ Claim(s) 5-7, 9, 13, 14, 16, 18, 19 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/28/02, 8/19/03
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

The following quotation of 37 CFR § 1.75(a) is the basis of objection:

(a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

1. Claims 1, 10, 17 are objected to under 37 CFR § 1.75 (a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

Referring to claim 1, the phrase “calculates image quality of the fingerprint image” in lines 16-17 is inconsistent within its context. More specifically, the fingerprint identification terminal appears to be processing a plurality of images. It appears that the applicant intended the phrase to read “calculates image quality of the fingerprint images”. Appropriate correction is required. Similar objections are applicable to claims 10 and 17.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. Claims 1-4, 8, 10-12, 15, 17, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Yamaguchi et al., European Patent No. 0797170 A1 (“Yamaguchi”) and Bergenek et al., U.S. Patent No. 6,241,288 (“Bergenek”).

Referring to claim 1, Yamaguchi discloses a fingerprint identification system for conducting identification of fingerprints using fingerprint images, comprising:

a. a fingerprint identification device (420) for conducting fingerprint identification based on first feature vector data obtained by extracting features of a fingerprint from a fingerprint image (col. 17, line 54-col. 18, line 43 and figure 42);

b. a fingerprint identification terminal (411) for transmitting a fingerprint image or the first feature vector data of the fingerprint image to the fingerprint identification device remotely disposed and receiving an identification result from the fingerprint identification device (col. 18, lines 27-43 and figure 42) ;

i. wherein the fingerprint identification terminal receives input of a plurality of fingerprint images, calculates image quality of the fingerprint images to rearrange the plurality of fingerprint images based on the image quality, and transmits the first feature vector data of the fingerprint images rearranged to the fingerprint identification device [col. 15, lines 3-16. Yamaguchi explains that a numerical value, which indicates the image quality, is determined for the plurality of fingerprint images (col. 16, lines 24-49). For example, the lower the average number of pseudo minutiae indicates a higher image quality (col. 15, line 57-col. 16, line 3). Accordingly, this numerical assignment rearranges the plurality of fingerprint images based on image quality]

ii. the fingerprint identification device receives input of the first feature vector data of the plurality of fingerprint images and collates the first feature vector data of the plurality of fingerprint images with second feature vector data of a plurality of fingerprint images stored in a fingerprint data base to conduct fingerprint identification determination based on a plurality of identification scores corresponding to the respective second feature vector data which are obtained from the matching result [col. 17, lines 33-48 and col. 18, lines 27-43. Yamaguchi does not explicitly disclose that the fingerprint identification is based on a plurality of identification scores corresponding to the respective second feature vector data. However, Yamaguchi explains that the fingerprint image data (first feature vector data) is compared with the plurality of fingerprint image data (second feature vector data) stored in the database (col. 17, lines 33-39). In this case, the Examiner notes that the identification process in Yamaguchi would have to be based on a type of identification score, since the system determines the best match out of the plurality of image data stored in the database].

Yamaguchi does not explicitly disclose that the fingerprint images comprise a plurality of fingerprint images for one finger. However, this feature was exceedingly well known in the art. For example, Bergenek discloses a fingerprint identification system that obtains a plurality of fingerprint images for one finger (col. 12, line 64-col. 13, line 7).

Yamaguchi and Bergenek are combinable because they are both concerned with fingerprint identification systems that utilize high quality fingerprint images. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the fingerprint images of Yamaguchi so that the fingerprint images are for one finger, as taught by

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Bergenek. The suggestion/motivation for doing so would have been to enhance the fingerprint identification process by improving image quality (Bergenek, col. 13, lines 3-7). Therefore, it would have been obvious to combine Yamaguchi with Bergenek to obtain the invention as specified in claim 1.

Referring to claim 2, Yamaguchi further discloses that the fingerprint identification terminal includes a scanner interface unit (412) having a function of receiving input of a plurality of fingerprint images from an external fingerprint scanner device, a main memory (414) for holding the plurality of fingerprint images and a main control unit (413) for calculating image quality of each of the plurality of fingerprint images held in the main memory, ranking the plurality of fingerprint images in the main memory in descending order of quality and selecting a preset number of high-quality images to calculate first feature vector data of a fingerprint from the selected fingerprint image (col. 16, lines 24-col. 17, line 14 and figure 42).

Referring to claim 3, Yamaguchi further discloses that the fingerprint identification terminal includes a communication input/output control unit having a function of sending the selected fingerprint image or the first feature vector data of the image to the fingerprint identification device and a function of receiving identification result data returned from the fingerprint identification device (col. 17, lines 5-48 and figure 42).

Referring to claim 4, Yamaguchi further discloses that the fingerprint identification terminal includes:

- a. a console display unit capable of displaying fingerprint identification processing result indication of the plurality of fingerprint images stored in the main memory, and an input unit for receiving input for changing a display method of the console display unit and changing

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condition data for use in fingerprint identification which is set in advance in the processing of the main control unit (col. 16, lines 24-54).

Referring to claim 8, Yamaguchi further discloses that the fingerprint identification device receives input of each feature vector data of a plurality of fingerprint image data for each of a plurality of fingers to output an identification result with a representative score calculated from the feature vector data of the plurality of fingerprint images of each finger in combination with a result of whether the representative score of each finger satisfies preset conditions (col. 16, line 50-col. 17, line 4).

Referring to claims 10 and 17, see the rejection of at least claim 1 above.

Referring to claim 11, Yamaguchi and Bergenek do not explicitly disclose that the fingerprint terminal displays identification result data of the fingerprint images obtained by the fingerprint identification device. However, Official notice is taken that displaying identification result data of fingerprint images was exceedingly well known in the art. Therefore, it would have been obvious to display the identification result data of the fingerprint images in the method of Yamaguchi and Bergenek. The suggestion/motivation for doing so would have been to visually indicate that a match has been found between the fingerprint image data.

Referring to claim 12, see the rejection of at least claim 2 above.

Referring to claims 15 and 20, see the rejection of at least claim 8 above.

*Allowable Subject Matter*

3. Claims 5-7, 9, 13-14, 16, 18, 19, 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Takahashi, U.S. Patent Application Publication No. 2001/0040988 discloses a method for performing identification of fingerprint images based on image quality.

b. Thomopoulos et al., U.S. Patent No. 5,978,495 discloses a method for performing identification of fingerprint images based on a fusion of matching scores of image features of a single fingerprint image.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 703-306-4038. The examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri 9:30am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.




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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
ck

November 2, 2004

  
Jon Chang  
Primary Examiner